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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/735,060	12/12/2000	Janet A. Barnett	13362	3416

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EXAMINER	
ALI, SYED J	

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/735,060	BARNETT ET AL.	
	Examiner	Art Unit	
	Syed J Ali	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment filed July 26, 2004. Claims 1-8 are presented for examination.

2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Priority

3. Applicant has requested acknowledgment of a claim for foreign priority. Applicant has not complied with the requirements of 37 CFR 1.63(c), since the oath, declaration or application data sheet does not acknowledge the filing of any foreign application. A new oath, declaration or application data sheet is required in the body of which the present application should be identified by application number and filing date. Additionally, Applicant has not filed a certified copy of the foreign application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 112

4. **Claims 6 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

5. The following terms lack antecedent basis:

a. In line 5 of claim 6, "the Results Archive".

b. In line 9 of claim 8, "the Results Archive".

Claim Rejections - 35 USC § 103

6. **Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Primak et al. (USPN 6,389,448) (hereinafter Primak) in view of Arnold et al. (USPN 6,446,070) (hereinafter Arnold).**

7. As per claim 1, Primak teaches the invention as claimed, including a system for receiving and distributing user services for execution by any of a plurality of dynamically available resources registered by the system whereby a computational load of each of said services is distributed for execution among said dynamically available resources, the system comprising:

an Execution Server arranged to communicate with at least one user browser, the Execution server including an Execution Manager (col. 2 lines 30-48; col. 4 lines 27-46);

a Lookup Finder object for Load Balancers communicating an availability of Load Balancers to said Execution Manager (col. 4 lines 7-26);

at least one Load Balancer in communication with the Execution Manager and the Lookup Finder object for Load Balancers (col. 3 line 49 - col. 4 line 26);

at least one Compute Server in communication with at least one Load Balancer (col. 4 lines 7-26); and

a Lookup Finder object for Compute Servers in communication with the at least one Load Balancer and the at least one Compute Server (col. 4 lines 47-62);

whereby the Execution Manager waits for services to be submitted to it by the at least one user browser through the Execution Server (col. 3 lines 30-48), wherein the Execution Manager searches for dynamically available Load Balancers using the Lookup Finder object for Load Balancers and submits computationally intensive services to the Load Balancer found (col. 3 line 49 - col. 4 line 26), and wherein said first Load Balancer searches for available Compute Servers using the Lookup Finder object for Compute Servers to distribute the user services for execution (col. 4 lines 7-26).

8. Arnold teaches the invention as claimed, including the Execution Server including a Result Manager (col. 6 lines 23-41; col. 6 line 58 - col. 7 line 11); and

implementing functionality associated with load balancing techniques within servlets (col. 3 lines 26-46).

9. It would have been obvious to one of ordinary skill in the art to combine Primak and Arnold since the load balancing method of Primak is primarily concerned with evenly distributing a processing load across a plurality of servers, but makes no reference or recommendation as to how the results of the processing are handled. This is a significant drawback, especially in the field of distributed computing, where each server may only perform processing for a portion of a task, wherein results from one sub-task may be needed for subsequent actions. Arnold specifically addresses this point and provides a results cache for storing the processing results such that subsequent actions or methods may use the data (col. 7 lines 5-11).

10. As per claim 2, Primak teaches the invention as claimed, including the system defined by claim 1, further including means for dynamically finding Load Balancers and Compute Servers each time a system service requires execution (col. 2 lines 32-44).

11. As per claim 3, Arnold teaches the invention as claimed, including the system defined by claim 1, wherein a Compute Server Result is provided to the Results Manager servlet for storage in a Result Archive (col. 6 line 58 - col. 7 line 11).

12. As per claim 4, Arnold teaches the invention as claimed, including the system defined by claim 3, wherein the Result Archive is in communication with a Results Finder servlet which provides a URL of a Result to the user browser via the Execution Server (col. 8 lines 1-31).

13. As per claim 5, Primak teaches the invention as claimed, including a method for executing a user service within a system by distributing a load of the service across dynamically available resources of the system, the system comprising an Execution Server, and Execution Manager, a Load Balancer Lookup Finder object, at least one Load Balancer, a Compute Server Lookup Finder object and at least one Compute Server, wherein the method comprises:

receiving a user request for execution of a service at the Execution Server (col. 3 lines 30-48);

providing the service to the Execution Manager for execution (col. 2 lines 30-48; col. 4 lines 27-46);

searching for the at least one Load Balancer using the Load Balancer Lookup Finder object to define service load execution by the at least one Compute Server (col. 4 lines 7-26);

submitting the service to the first Load Balancer found (col. 3 line 49 - col. 4 line 26);

searching for Compute Servers which are available and capable of executing some portion of the service using the Compute Server Lookup Finder object (col. 4 lines 7-26); and

distributing the service load for execution across the available Compute Servers such that each Compute Server is utilized in realizing a Result (col. 4 lines 7-26).

14. Arnold teaches the invention as claimed, including implementing functionality associated with load balancing techniques within servlets (col. 3 lines 26-46).

15. As per claim 6, Arnold teaches the invention as claimed, including the method of claim 5 further including the steps of:

directing the Result to a Results Manager servlet (col. 6 lines 23-41);

transferring the Result from the Results Manager servlet to a Result Archive (col. 6 line 58 - col. 7 line 11);

directing a pointer to the Result to a Results Finder servlet (col. 6 line 58 - col. 7 line 11); and

transferring the pointer to the Result stored in the Results Archive to the user (col. 6 lines 23-41).

16. As per claim 7, Primak teaches the invention as claimed, including a computer readable medium having computer readable program code means embodied therein for executing a user

service within a system by distributing a load of the service across dynamically available resources of the system, the system comprising an Execution Server, and Execution Manager, a Load Balancer Lookup Finder object, at least one Load Balancer, a Compute Server Lookup Finder object and at least one Compute Server, the computer readable program code means comprising:

computer readable computer code means for receiving a user request for execution of a service at the Execution Server (col. 3 lines 30-48);

computer readable computer code means for providing the service to the Execution Manager for execution (col. 2 lines 30-48; col. 4 lines 27-46);

computer readable computer code means for searching for the at least one Load Balancer using the Load Balancer Lookup Finder object (col. 4 lines 7-26);

computer readable computer code means for submitting the service to the first Load Balancer found (col. 3 line 49 - col. 4 line 26);

computer readable computer code means for searching by the at least one Load Balancer for Compute Server Lookup Finder object for available Compute Servers capable of executing the service (col. 4 lines 7-26); and

computer readable computer code means for distributing the service load across the available Compute Servers for execution such that each Compute Server is utilized in realizing a Result (col. 4 lines 7-26).

17. Arnold teaches the invention as claimed, including implementing functionality associated with load balancing techniques within servlets (col. 3 lines 26-46).

18. As per claim 8, Arnold teaches the invention as claimed, including the computer readable medium of claim 7 further including computer readable computer code means for directing the Result of execution to a Results Manager servlet;

computer readable computer code means for transferring the Result from the Results Manager servlet to a Result Archive (col. 6 line 58 - col. 7 line 11);

computer readable computer code means for directing a pointer to the Result in the Result archive to a Results Finder servlet (col. 6 line 58 - col. 7 line 11); and

computer readable computer code means for transferring the pointer to the Result stored in the Results Archive to the user (col. 6 lines 23-41).

Response to Arguments

19. Applicant's arguments filed July 26, 2004 have been fully considered but they are not persuasive.

20. Applicant argues on page 7, "*With respect to the Examiner's assertion that claims 6 and 8 provide no antecedent basis for the term "the Results Archives", Applicant respectfully submits that the term does have proper antecedent basis (see, line 3 of claim 6 and line 5 of claim 8).*"

21. Line 3 of claim 6 and line 5 of claim 8 include limitations pertaining to "a Result Archive", whereas the lack of antecedent basis is for the limitation of "the Results Archive" (emphasis added) in line 5 of claim 6 and line 9 of claim 8.

22. Applicant argues on page 8, "*Primak does not disclose or suggest searching for a load balancer using a load balancer lookup finder. The Examiner cites Primak col. 3, lines 49-col. 4, line 6 and alleges that Primak discloses the cited feature. Primak is silent about how the load balancer is selected for the packet. The cited passage discloses that a pseudo-random number is assigned to each SYN packet received by a load balancing module 12, and as discussed above, this number assigned to the SYN packet is then used to assign the client service request to one of the servers.*"

Applicant adds that "*since Primak does not disclose or suggest a load balancer lookup finder, Primak is incapable of disclosing or suggesting searching for a load balancer using the load balancer lookup finder. Moreover, Primak does not disclose or suggest searching for a load balancer using the load balancer lookup finder* ***and*** *searching for available Compute Servers using the Compute Server Lookup Finder.*"

23. Examiner respectfully disagrees. Applicant has only discussed one method that the load-balancing module of Primak utilizes for determining which server should process a packet, wherein each server acts as a load balancer for evaluating its processing capacity. Primak discusses an evaluation process performed by a load-balancing module resident within each server. This evaluation process includes calculating a pseudo-random number for each SYN packet (as discussed in Applicant's arguments) **and** determining the relative ability of each server. This determination is based on CPU capacity, CPU load, number of concurrent processes, among other conditions. Regarding the latter argument, the functionality of searching for compute servers is encapsulated within the same software module as the load balancer. It serves the function of both balancing the processing load across the network, while also

determining the server that is best suited to process it. The load balancer lookup and compute server lookup are both embodied by the load-balancing module resident on each server.

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Syed Ali
September 30, 2004

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